

In the Claims:

Add the following claims:

12. A flight tube for guiding ions, said flight tube comprising:
- (a) an insulating inner surface; and
  - (b) an ion mirror fixed to said inner surface and comprising: a front electrode, a middle electrode and a rear electrode, each of said electrodes being designed for receiving said ions and creating an electric field which retards and reflects said ions.
13. The flight tube as recited in claim 12, wherein said ion mirror is located at one end of said insulating inner surface.
14. A mass spectrometer comprising:
- (a) an ion source for generating and accelerating ions along a flight path;
  - (b) a flight tube downstream from said ion source for shielding said ions, said flight tube having an insulating inner surface;
  - (c) an ion mirror fixed to said inner surface and comprising: a front electrode, a middle electrode and a rear electrode, each of said electrodes being designed for receiving said ions and for creating an electric field that retards and reflects said ions; and
  - (d) an ion detector for receiving ions reflected from said ion mirror.